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BEES OF THE GENUS *MEGACHILE* FROM THE BELGIAN CONGO[1]

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Except when the contrary is stated, all the bees recorded below were obtained by Messrs. Lang and Chapin on the American Museum Congo Expedition, and will be found in the collection of the American Museum.

Frequent reference has necessarily been made to a larger paper on African *Megachile*, not published at the time of writing. It will presumably appear in 1935.

Megachile adeloptera Schletterer

This was described in 1891 from females taken in the lower Congo district. Some of the salient characters are black hair of face and front (instead of the clear white of *M. ianthoptera* Smith), the mandibles with two conspicuous apical teeth, the dense sculpture of the mesothorax, the white hair at sides of abdomen, the black ventral scopa which is pallid at base. The species has not been well understood, and in the Congo Museum I found more than one species standing under this name. But I am now satisfied that the true *M. adeloptera* is the species that I described (1931) as *M. lineolata*, and Vachal (1903) called *M. duponti*. The following specimens belong here: Stanleyville, 14 ♀, March, April; Thysville, 1 ♀, June; Gamangui, 1 ♀, February.

The male *M. adeloptera* as described by Friese is a *Creightonella*, and in 1931 (Rev. Zool. Bot. Afr., XX) I discussed this species as a member of that subgenus. But apparently this is not the case; the true male is a typical *Eumegachile*, with the clypeus exposed, and carrying a long white beard on lower part. Now Vachal describes such a male for his *M. duponti*, and especially remarks on the large blood-red longitudinal band on the mandibles, and the inner mandibular ridge going more than halfway toward base. A male agreeing with his description comes from Stanleyville, March, 1915, and it may be added that the mesothorax is distinctly transversely lineolate. The coxae are well spined; and the red anterior basitarsi, though only moderately broad,

[1]Scientific Results of the Congo Expedition. Entomology No. 28.

are hollowed beneath. The front tibiae are red apically. I assume that this is the true male of *M. adeloptera;* it is certainly Vachal's male *M. duponti.* I find a similar blood-red mark on the mandibles of *Gronoceras holorhodura* Cockerell, which is not related.

Megachile ancillula Vachal

Stanleyville, 10 ♀, 16 ♂, February, March, April, one captured by *Bembex;* Faradje, 17 ♀, March, April, October, November, December; 1 Kinshasa, 1 ♂, May; Malela, 2 ♀, July; Garamba, 1 ♀, July; Medje, 1 ♀, May; Thysville, 1 ♀, June. Also the following from the Congo Museum: Elisabethville, ♀ (Dr. M. Bequaert); Lubero, Ituri (Mdme. Van Riel); Luluabourg (Callewaert); Leverville (Mdme. J. Tinant); Kilo (G. du Soleil); Katompe, Lomami (Dr. M. Bequaert); Kalwe, Lomami (Quarré); Moto, Haut Uelé (Burgeon); Abemva, Haut Uelé (Burgeon); Congo da Lemba (Mayné).

Megachile atriceps Cresson

Stanleyville, 3 ♀, April; Poko, 1 ♀, August; Niangara, 1 ♀, November. This is a species of *Eumegachile,* described from Cuba, but introduced from Africa.

Megachile bituberculata Ritsema[1]

Stanleyville, both sexes, April; Gamangui, ♀, February; Thysville, ♀, June; Niangara, ♀, November; Malela, both sexes, July; Poko, both sexes, August; Boma, ♂, June. Natal: Durban, 2 ♂ (4969).

A very abundant species in the Congo basin. The male has red hair on the sixth tergite. One Durban male represents the variety *mediocana* Cockerell, having the hair at end of thorax and base of abdomen pure white, but the other has this hair slightly yellowish. The name *mediocana* is hardly worth recognizing. A female of the variety *rubripedana* Strand was taken by A. Collart at Blukwa, Ituri, November 22.

Megachile callichlora Cockerell

Stanleyville, 1 ♂, April. The Congo Museum sends it from Kapwasa, Katanga, ♀ (Brédo); Eala, ♂, ♀ (Brédo); Kisantu, ♂, ♀ (Vanderyst); Luluabourg, ♂, ♀ (Callewaert); Stanleyville, ♂ (Dr. Bequaert); Kadiamapanga, Katanga (Brédo).

[1]Mixed with these, and superficially resembling them, I found *Lithurgus sparganotes* Schletterer, from Stanleyville and Ava Kubi. There is also a male of this species from Bafwasende, September, 1909.

Megachile claribasis Cockerell

Gamangui (27° 30′ E., 2° 10′ N.), 1 ♀, February, 1910. It seems probable that this species is conspecific with *M. bouyssoui* Vachal, 1903. Meade-Waldo examined male types or cotypes of this and *M. devexa* Vachal, both from Chutes de Samlia, and found them apparently the same. He did not see the females, and the holotype of *M. bouyssoui* must be considered to be the female from N'Doro, which differs from *M. devexa* by the shining mesothorax. It now seems probable that the supposed male *M. bouyssoui* examined by Meade-Waldo do not belong to that species; that is, Vachal had two species under the name, but the name must now be restricted to the female.

Megachile crocuta Schletterer

Stanleyville, 6 ♀, April; Thysville, 1 ♀, June; Poko, 3 ♀, August. These females are *M. crocutella* Cockerell, which I now consider to be inseparable from *M. crocuta*. There are twelve males of *M. crocuta* from Stanleyville, March, April. The Congo Museum sends this species from Eala (Brédo); Komi, Sankuru (Ghesquière); and Modu (N'Asnla), June 5 (Brédo).

Megachile decemsignata Radoszkowski

Stanleyville, 1 ♂, April 2. This is like *M. crocuta* Schletterer in almost all respects, but the thorax anteriorly has pale red hair, especially noticeable in front of the tegulae; there is also reddish hair along the sides, above the wings. The sixth tergite is very short, less produced than in *M. crocuta*. This I take to be the male of *M. decemsignata*, which was based on a female from Angola. According to Friese, *M. decemsignata* and *M. crocuta* are one species, but the matter is not settled, and it is better to regard them provisionally as distinct.

Megachile ealana Cockerell

Stanleyville, 1 ♀, April 17, 1915. This was described from Eala, Belgian Congo, where it was collected by R. LeJeune in 1929. It looks exactly like *M. clypearis* Friese and *M. trichora* Vachal. From the latter it is easily known by not having the peculiar hairs on the legs, and by the mandibles, which are very broad, with two apical teeth, and then a long cutting edge, with only a slight rudiment of the third tooth. From *M. clypearis* it is especially known by the low broad clypeus, of *Eumegachile* style, with a shining raised line in the middle. The mandibles also differ conspicuously, and the hind basitarsi are broader.

Thus we have two species which, on the clypeus and mandibles, would be classified in different subgenera, but which are in other respects extremely similar. Also from Stanleyville are five males of *Eumegachile* type, and these agree with what I have described (1931, Rev. Zool. Bot. Afr., XX, p. 145) as the male of *M. clypearis*, though expressing doubt. I now conclude that this insect is the male of *M. ealana*. My female *M. clypearis*, as recorded in the same place, is correctly named. There is also a male *M. ealana* from Thysville, June.

Megachile ekuivella Cockerell

Vankerckhovenville, 29° 30′ E., 3° 20′ N., 1 ♀. This is in the Kibali Ituri District.

Megachile flavibasis Cockerell

Natal: Durban, 1917 (4969). Compared with the type.

Megachile flavida Friese

Boma, one ♀, June 17, 1915. Resembles *M. lobicauda* Cockerell, but the ventral scopa is light red instead of white, and the hair of face is white.

A male from Banana, April, 1915, is peculiar for having the hair of face rich golden (but the triangular patch on base of mandibles white) and the transverse keel of sixth tergite broadly rounded, neither emarginate nor dentate. The greatly widened front basitarsi are creamy white, having at the apex an enormous black lobe, so that it may be said that the basal half appears white, the apical half black.

M. flavida is generally known as a species occurring from Katanga to Natal, and it is surprising to find it at the mouth of the Congo.

Megachile gratiosa Gerstaecker

Stanleyville, 7 ♂, April; Faradje, 1 ♂, March.

The males of *M. ancillula* and *gratiosa* are small and superficially much alike. They are easily separated thus:

Tergite 5 with a white marginal hair-band; front femora light red above; front tibiae red on inner side ..... *ancillula* Vachal.

Tergite 5 with no white marginal band; front femora dark above. *gratiosa* Gerstaecker.

M. gratiosa is very widespread; Kohl records it from Aden (Arabia); it has been taken at Port Said, Egypt, and at Port Sudan, Sudan, by J. Ogilvie, and in South Africa.

Megachile guineae Strand

Stanleyville, 3 ♀, April. It is smaller than *M. callichlora* Cockerell and does not have the dense white hair on cheeks. It is closely allied to *M. bangana* Cockerell, from Liberia, but has not nearly so much black hair on abdomen. The mandibles are quadridentate, suggesting *M. decemsignata* Radoszkowski, but the black hair on thorax above excludes it from that. The clypeus is not keeled. I considered whether this might be the female of *M. pugionifera* Cockerell, but it appears too small, and there is no definite reason for associating these species together.

Megachile langi, new species

MALE.—Length about 11 mm., front wing 8.5; black, rather slender, with parallel-sided abdomen; mandibles and the very long slender simple antennae black; eyes dark purplish; face broad; mandibles bidentate, not evidently hairy at base, and with no tooth below; clypeus ordinary, very densely punctured, but glistening between punctures, with no keel or smooth line, the disc, as well as the sides of face adjacent, covered with very long black hair, but the region between antennae with long pale yellowish hair, contrasting; vertex and sides of front with black hair, under side of head with very long pale yellowish hair; upper part of cheeks thinly hairy; mesothorax and scutellum excessively densely and minutely punctured, faintly glistening; lower end of metathorax with a pair of large shining pits; mesothorax with intensely black hair, but scutellum and hind part of thorax with cream-colored hair, as well as a band at sides above the wings, and the anterior margin of thorax, the same hair also covering sides of thorax; tegulae small, very dark brown; wings dilute fuliginous, more or less violaceous; basal nervure falling short of nervulus; second cubital cell long, receiving recurrent nervures about equally far from base and apex; front coxae with well-developed, not very long, parallel spines; legs black, with thin hair, partly black and partly pale; front tarsi simple, rufous apically, the basitarsi with a long black fringe, the other joints with a pale fulvous fringe; middle tarsi with a grayish fringe, and long black hairs from basitarsi; hind basitarsi slender, seen from without showing a red fringe behind; first tergite with long creamy white hair; second tergite with pale hair at base, and at sides of the otherwise red marginal band; remaining tergites with very bright red hair, thin, and mainly abraded on 3 to 5, but dense and long on 6, and all the tergites except the first with broad red marginal hair-bands; transverse keel of tergite 6 with a deep semicircular emargination, but no denticles; apex of venter broadly rounded, reddened at end; no ventral hair-bands.

Stanleyville, 1 male, April, 1915. There is a superficial resemblance to *M. nasalis* Smith, but that differs in various characters, as for instance the hair of the face. From *M. ferrihirta* Cockerell it is separated thus:

Wings orange with dusky margin; sides of face with much white hair; first tergite above with red hair ..... *ferrihirta* Cockerell.

Wings dilute fuliginous; sides of face with black or grayish-black hair; first tergite above with white hair ..... *langi* Cockerell.

Megachile lobicauda Cockerell

Stanleyville, 1 ♀, 5 ♂, April; Kwamouth, 2 ♀, 1 ♂, May; Kinshasa, 1 ♀, 1 ♂, June; Niangara, 1 ♀, November; Thysville, 2 ♂, June; Poko, 1 ♂, August. The Poko male is very small, only about 9 mm. long, and one from Stanleyville is no larger.

It now appears probable that the *M. nigripollex* Vachal is only a variety of this species, and in that case Vachal's name has long priority. The front basitarsus of the male is white with a black or dusky mark and has at the side a large black lobe. The female has the ventral scopa white or creamy white, black at apex.

Megachile lutescens Cockerell

The males before me differ in respect to the long outstanding hairs of fifth tergite.

(A.) Outstanding hair of fifth tergite black. (Typical *lutescens*.) Stanleyville, five, April. Also one from the Congo Museum: Nord Tshisangwe, Elisabethville, February (Dr. M. Bequaert). The type locality is Lubutú, about 130 miles from Stanleyville.

(B.) Outstanding hairs of fifth tergite pallid or red. (Agrees with male assigned to *M. flavibasis* Cockerell. 1920.) Stanleyville, six, April; Thysville, one, June. Also one from Congo Museum: Lukenie River, Sankuru, January (Ghesquière).

When describing *M. lutescens* (1931) I wrote of the male: "It is certainly very near to *M. flavibasis* Cockerell, and perhaps only a subspecies, but readily separated by the black instead of light red outstanding hairs on fifth tergite." *M. flavibasis* was described from Natal, and I find the male identical with the second variety of *M. lutescens* recorded above. The only appreciable difference is in the darkened front legs of the whole series, in both varieties black or suffusedly reddened, much darker than in the original specimens of both species. So far, it would seem a simple matter to use the prior name *M. flavibasis* for the whole series, and call the first variety var. *lutescens*. But the type of *M. flavibasis* was a female, and this differs as follows from what I have determined as female *M. lutescens*, from Umtali, Southern Rhodesia (A. Mackie).

Legs black; mandibles black, faintly reddish subapically; dorsum of thorax with pale fulvescent hair; tergites 2 to 5 with pale fulvescent hair-bands; ventral scopa white at base, entirely red on sternites 3 to 5 . . . . . *lutescens* Cockerell.

Front trochanters and femora broadly red above, middle femora with a red stripe above; mandibles dark red; dorsum of thorax with much long black hair; tergites 2 to 5 with linear dull white hair-bands; ventral scopa broadly white at sides, nowhere distinctly red..... *flavibasis* Cockerell.

These females are not the same species, and it now seems highly probable that one or the other has been associated with the wrong male. Thus it seems best for the present to use the name *M. lutescens* for the material recorded above, that name having been based on the male.

I do not find the Umtali *M. lutescens* female in the Belgian Congo collections. *M. semivenusta* Cockerell, found in Katanga, has the ventral scopa white at sides, but it is not at all the same as the Natal female *M. flavibasis*. [*M. semivenusta* has a wide distribution, from Eala (Brédo) to Elisabethville (Ch. Seydel).] *M. polychroma* Cockerell, except for the much smaller size, is exceedingly close to the Natal female *M. flavibasis*.

Another series of ten males can be separated from typical *M. lutescens* as follows:

1.—Front femora clear red above; scutellum with cream-colored hair not mixed with black; first tergite with pale bright fulvous hair (Elisabethville). *lutescens* Cockerell.

First tergite with white or creamy-white hair; scutellum with much black hair; outstanding hairs on fifth tergite black..... 2.

2.—Front femora red above (Stanleyville, six, April)..... *lutescens* variety *a*.

Front femora black or very dark above (Stanleyville, three, April; Gamangui, one, February)..... *lutescens* variety *b*.[1]

My present opinion is that these are all varieties or races of one species.

Megachile marginipennis Cockerell

The type is from Bokani, Northern Nigeria (Simpson), and is in the British Museum. It also comes from Yapi, Gold Coast. Lang and Chapin took a female at Faradje, December, 1912. The female is 14.5 to 16.5 mm. long; the dilute orange wings have a broad dark border; legs bright ferruginous; ventral scopa black, the anterior part light red in middle. The female has the scape red and the mandibles black, whereas the male has the scape black and the mandibles red. It may be known from *M. bambiliensis* Cockerell by the dark margin of wings not invading the cells and front coxae of male not spined. The female clypeus is not keeled, except slightly so at apex; the lower margin is gently

[1] *M. lutescens* variety *b* from Stanleyville, which we now notice has longer and darker wings, is found by Miss Edith Stice to have quite distinct genitalia, and must be considered a distinct species. The variety *a* and the forms noted under (A) and (B) have the genitalia alike. The holotype of *M. lutescens* has the legs black. The variety *b* may be called **Megachile sticede**, new species.

concave. The first tergite is covered with pale or bright red hair, whereas the second and third have reddish bands.

Megachile obtusodentata Friese

Stanleyville, 7 ♀, April; Thysville, 2 ♀, June; Zambi, 1 ♀, June. When in good condition, this is easily recognized by the pale hair-bands at sides of tergites, but it is exceedingly close to *M. bituberculata* Ritsema. The female clypeus is deeply incised at apical middle, and the axillae are shining. A female from Thysville is smaller than usual, only about 11.5 mm. long. I have described the male of *M. obtusodentata*, in a paper not published at the time of writing, from a specimen collected by S. A. R. Prince Léopold (now King of the Belgians) at Ilebo, Kasai District. I find three males collected by Lang and Chapin at Stanleyville, April, 1915.

Megachile phanerognatha, new species

FEMALE.—Length about 10.5 mm., anterior wing 7.7; black, robust, with heart-shaped abdomen; hair of head and thorax rufo-fulvous, long and dull white on cheeks below, but on upper part of cheeks thin and slightly fulvescent, long and very dark brown on vertex, but tuft before ocelli fulvous; dull whitish on under side of thorax, but fulvous on tubercles and below wings; no admixture of dark hairs on thorax above; mandibles broad, quadridentate counting inner corner, a reddish depressed band back of teeth; base of mandibles broad, dull, with only very thin inconspicuous hair; clypeus convex, simple, strongly punctured, the upper middle shining between punctures, but no keel or smooth line; supraclypeal area closely punctured, but shining in middle; vertex dull; antennae black; mesothorax and scutellum entirely dull, conspicuously hairy; tegulae very dark brown; wings dusky; basal nervure falling a trifle short of nervulus; second cubital cell long, receiving second recurrent nervure much nearer apex than first to base; legs black, with pale fulvescent hair, red on inner side of tarsi; hind basitarsi greatly broadened; tergites 1 to 5 covered with short red hair, the paler marginal bands slender and inconspicuous; sixth tergite with thin grayish tomentum, and scattered, not very conspicuous, long black hair; ventral scopa pale yellow at base, then bright red, black on last sternite.

Stanleyville, 1 female, April 24, 1915. Much resembles *M. hypopyrrha* Cockerell, but differs by the fulvous (instead of black) hair in front of ocelli, the lack of dense white hair on cheeks, and the orange (not white) band on margin of fifth tergite. Resembles *M. corneipalmis* Vachal, but lacks the abundant long coarse black hair on sixth tergite, and hair at sides of face is fulvous (white in *M. corneipalmis*). The following key to females will also be useful.

1.—Tegument of base of abdomen red.
corneipalmis Vachal and *melliferina* Cockerell.
Tegument of base of abdomen black.....2.

2.—Cheeks not covered with white hair.....*phanerognatha* Cockerell.
Cheeks densely covered with pure white hair.....3.
3.—Mandibles very broad at base and covered with long hair. *pogonognatha* Cockerell.
Mandibles not thus broad and hairy.....4.
4.—Tegulae dark brown; fringe of fifth tergite white, contrasting with that of fourth.....*hypopyrrha* Cockerell.
Tegulae light fulvous; fringe of fifth tergite like that of fourth..*cordata* Smith.

Megachile pogonognatha, new species

FEMALE.—Length slightly over 10 mm.; black, with the general build and appearance of *M. ekuivella* Cockerell, but with more massive mandibles, and hair of face fulvous. Eyes pale gray, blackish in front; mandibles large, the broad base covered with long yellowish-white hair, in the manner of the much larger *M. planatipes* Cockerell; apical part of mandibles dark reddish, but the border broadly black, the apex with a stout tooth, separated by a broad angular incision from the second tooth, which is merely the corner of the long straight cutting edge which follows; hair of face and front pale yellowish, the color strongest below; clypeus exposed in middle, but sides covered by dense brushes of yellow hair; clypeus finely punctured, with no keel or smooth line, but supraclypeal area shining; vertex dull and densely punctured, shining at sides when seen from above; hair of vertex short and scanty, pale yellowish, with no black; mesothorax and scutellum entirely dull, with thin short fulvous hair, not mixed with black; thorax posteriorly and at sides with long fulvous hair, becoming dull whitish beneath; cheeks densely covered with long white hair; tegulae small, very dark brown; wings dusky, stigma dusky red; basal nervure almost meeting nervulus; second cubital cell very long, receiving second recurrent nervure near end, the first more remote from base; legs black, with thin grayish and yellowish hair, light red on inner side of tarsi; front legs slightly reddened; spurs red; hind basitarsi about as broad as tibiae, very hairy; abdomen heart-shaped, hind margins of tergites reddish; tergites with broad red hair-bands, and red hair in sulcus of second; sixth tergite with fine dull white tomentum, and no conspicuous black hairs; ventral scopa white at extreme base, but mainly light yellow, black on last sternite.

Kwamouth, 1 female, May 24, 1915. The description of *M. abongana* Strand indicates a very similar insect, but that has quadridentate mandibles. Kwamouth is on the Congo, about 3° S. and 16° E.

Megachile polychroma Cockerell

Described in a paper not published at the time of writing, from a female collected at Elisabethville (W. P. Cockerell). Lang and Chapin found females at Bafwabaca, 27° 30′ E., 2° 10′ N., January, 1910 (three); Stanleyville, April (three).

This species is about 8.5 mm. long and is extremely like the European *M. rotundata* (Fabricius), with the same outstanding black hair at sides of abdomen, as seen from above. The following table will facilitate identification.

1.—A white hair-band in scutello-mesothoracic suture; fifth sternite with white hair. *submucida* Alfken.

No white hair-band in scutello-mesothoracic suture.....2.

2.—Clypeal margin straight; hair of metathorax pure white; apical part of fifth sternite with much black hair.....*rotundata* (Fabricius).

Clypeal margin in middle evidently arched and thickened; hair of metathorax flavescent; apical part of fifth sternite with little black hair. *polychroma* Cockerell.

I do not find *M. polychroma* in the collection received from the Congo Museum. The mandibular teeth in this species are variably multiplied by subdivision. In one Stanleyville specimen, not otherwise peculiar, there are six little equal teeth on the mandibular margin. *M. polychroma* seems too small to be the female of *M. lutescens* Cockerell and is quite unlike what I have supposed to be the female of that species; but it is very close to the larger female *M. flavibasis* from Natal, the male assigned to which appears to be conspecific with *M. lutescens*.

Megachile pugionifera, new species

MALE.—Length about 11.5 mm., anterior wing 8.7; in all respects very close to *M. pugionis* Cockerell, but distinctly smaller, and also differing thus: upper part of clypeus with thin fulvescent hair, but sides of face, supraclypeal region, and front, all with long black hair; thorax anteriorly with black hair, and hair in region of scutellum mainly black; tegulae entirely black; second recurrent nervure meeting outer intercubitus; tarsi with red hair on inner side; spine of seventh tergite with an angular crest at base above (posteriorly). The mandibles have two prominent teeth, the first long, the second triangular; on the front coxae, laterad of the spines, is a large patch of copper-red hair. This hair on the front coxae, and the abdominal spine, indicate affinity with *M. gastracantha* Cockerell, described from Liberia, but also found by Neave, 150–200 miles west of Kambove, in Katanga. The red hair and orange wings of *M. gastracantha* give it a wholly different appearance.

Stanleyville (type locality), March, 1915, one male. A second male, from Ava Kubi, November 17, 1909, is referred here, agreeing in size and the character of the spine, but it has pale hair between antennae, and the second recurrent nervure does not meet the outer intercubitus. The dorsal hair of thorax is denuded.

M. pugionifera is related to the Palaearctic *M. sericans* Fonscolombe, undoubtedly falling in the same group.

Megachile pugionis, new species

MALE.—Length about 12.5 mm., but hard to measure because the abdomen curves downward and inward, as in various osmiines; anterior wing 9.3 mm.; black, with comparatively long and narrow abdomen, its width about 4 mm.; eyes dark brown, slightly purplish; face broad; mandibles and the long simple antennae black; mandibles with a very large tooth, obliquely directed mesad, near the middle beneath;

clypeus convex, glistening, strongly and closely punctured, with no smooth line; the upper part bare, with scattered long black hairs, the lower part with a long dense yellowish beard; sides of face, and region between and below antennae, with very long hair, partly pale yellow, partly black; vertex and front with black hair, cheeks with dull white; vertex minutely and densely punctate-striate; mesothorax and scutellum entirely dull, the punctures excessively small and dense; hair of thorax dull white, long, a little flavescent, but clear white on metathorax, rather short and all black on disc of mesothorax (but white on thorax anteriorly), and black hairs intermixed on scutellum; area of metathorax entirely dull; tegulae very dark brown; wings dark fuliginous, with hyaline base; basal nervure falling short of nervulus; second cubital cell receiving first recurrent nervure nearly twice as far from base as second from apex; legs black, with large claws, but the front femora and tibiae suffused with rufescent in front; hair of legs thin and mostly whitish, not brightly colored on inner side of tarsi; front coxae with short spines, in the midst of long hair; front tarsi simple, with a fringe of dark hair behind; sides of first tergite densely covered with white hair; second with similar white hair, forming a sort of thick L; third to sixth with transversely elongate white marks at sides, but no bands across the middle; sixth convex, with short black hair, with no median keel, concave before the broadly rounded transverse keel, which is neither emarginate nor dentate; seventh tergite produced into a very long spine, the upper (posterior) margin of which is straight. There are no pulvilli, but there is a little tuft of hair between the claws.

Poko, August, 1913, 1 male. A peculiar species, with the spine near apex of abdomen beneath suggesting the otherwise quite different *M. nigriceps* Friese. The spined seventh tergite allies the insect with *Creightonella*, but the sixth tergite is wholly different.

Megachile pyrrhothorax Schletterer

MALE.—Length about 12 mm., anterior wing 9; robust, with short abdomen; black, including mandibles and antennae; tegulae nearly black, the margin reddened anteriorly; middle and hind legs black, but front legs clear red, the femora with a dusky suffusion at end, the tibiae with a broad black stripe behind; head, thorax and first tergite with abundant long fulvous pubescence, on vertex, mesothorax and tubercles ferruginous, on hind part of thorax and first tergite pale; antennae evidently but not greatly broadened at apex; mandibles tridentate, the second tooth long and curved, a great tooth near base beneath; upper part of clypeus bare, highly polished, impunctate; vertex, mesothorax and scutellum dull; wings dilute brownish, with dark nervures; basal nervure falling short of nervulus; second cubital cell long, receiving recurrent nervures about equally distant from base and apex; front coxae polished, with stout but rather short spines; front tarsi greatly broadened, the basitarsus with a very broad hollowed lobe, the posterior fringe very long, dense, creamy white; the front tibiae are swollen, and keeled behind, and have strong punctures; middle tarsi dark but broadened, with an extremely long pale red fringe behind; hind tarsi stout, with a long shining pale yellowish fringe in front; abdomen beyond the first tergite entirely black, with black hair, but no bands or spots; transverse keel of sixth tergite broadly bilobed, not dentate; seventh tergite (beneath) with a spine; venter with bands of pale hair.

Stanleyville, April, 1915, 1 male, 1 female. Very near to *M. rufi-cauda* Cockerell, except for the black abdomen, which gives it an entirely different appearance. Schletterer (1891) described the female. Vachal was of the opinion that this is identical with *M. unifasciata* Radoszkowski (1881), described from Angola. This cannot be definitely affirmed but I now think it probable.

Megachile rhodesica ituriana, new subspecies

FEMALE.—Length about 10 mm., anterior wing a little over 6; black, the head and thorax with dull white hair, but long thin blackish hair on vertex, but no dark hair on thorax above, the hair on mesothorax extremely thin and short; mandibles black, a little reddened near apex, the base with a small patch of pale, slightly flavescent, hair, the outer side strongly sulcate, the cutting edge very oblique, quadridendate; clypeus exposed in middle, overlapped at sides with yellowish-white hair, the disc convex, very densely and minutely punctured, glistening in middle, with a fine smooth line, visible only from a certain angle; margin of clypeus straight, not thickened; lower margin of supraclypeal area shining; vertex behind ocelli very short, dull; cheeks with white hair; flagellum bright ferruginous beneath, dusky at base; mesothorax and scutellum entirely dull, excessively finely and minutely punctured; no trace of a light band in scutello-mesothoracic suture, but a slender band along hind edge of scutellum; area of metathorax dull; tegulae very dark reddish brown, with a broad hyaline margin; wings dusky hyaline; second cubital cell long, receiving second recurrent nervure near apex, the first more distant from base; legs reddish black, with the usual pale hair, reddish on inner side of tarsi; hind basitarsi broad, very hairy, about as long as the other joints together, fifth joint clear red; abdomen dull, minutely punctured; first tergite with white hair at sides; tergites with very slender, slightly flavescent bands, largely failing or denuded in middle, but not broadened at sides; sixth tergite with a transverse patch of grayish tomentum, not conspicuous; ventral scopa pure white at base, light red on sternites four and five (not black at sides), on sixth red at base, otherwise black.

Faradje, December, 1912, 1 female. Resembles *M. venusta* Smith, but distinguished by various characters, especially the red under side of flagellum. The color of the flagellum also distinguishes it from *M. rhodesica* Cockerell, but it is so similar that I treat it as a subspecies. I had come to regard *M. rhodesica* as a race of *M. venusta,* but the genitalia of a male from the Matopo Hills, Southern Rhodesia, presumed to belong to *M. rhodesica,* show structures very distinct from those of *M. venusta.*

Megachile rhodotrichura Cockerell

Stanleyville, 1 ♂, April. Looks like *M. torrida,* but hair on fifth tergite is bright red instead of black. Described from Katanga.

Megachile rudissima Cockerell

The female looks exactly like *M. adeloptera* Schletterer, but is really quite distinct. The dull densely punctured mesothorax is without the glistening transverse striae; the mandibles have the third tooth well developed, and there is a conspicuous line of pale hair just back of the margin; the femora have peculiar, evenly spaced, capitate hairs. This species has been considered very rare, but the following specimens are in the collection.

Stanleyville, 15 ♀, February, March, April; Thysville, 1 ♀, June; Gamangui, 2 ♀, February; Poko, 1 ♀, August.

Males which I refer here are of the *Eumegachile* type, the broad mandibles entirely black, with the carinae lacking on the broad dull basal portion. There are seven from Stanleyville, March and April, and two from Gamangui, February. This male agrees rather closely with Vachal's account of male *M. devexa* Vachal, but the type of *M. devexa* is a female from N'Doro, differing in many respects from *M. rudissima.* Male *M. rudissima* has the front coxae with short spines; tibiae rufous apically and the red front basitarsi hollowed beneath, as in *M. adeloptera;* face very broad; clypeus densely punctured, not keeled (in *M. adeloptera* there is a raised line on upper part); antennae entirely black; tegulae black; wings fuliginous except at base; mesothorax and scutellum dull and very densely punctured; white spots at sides of abdomen transverse and well separated; apex with much black hair, the transverse keel of sixth tergite very broadly rounded and shallowly emarginate.

Megachile ruficauda Cockerell

Stanleyville, March and April, 2 ♂.

Megachile rufipes (Fabricius)

Taken in great numbers at Faradje, Stanleyville, and Poko. All the Faradje and Poko specimens are females, and there are only six males from Stanleyville, taken in April and August. There are many males from Boma, taken in June. From Lisala two males and two females, May. Matadi, June, 4 ♀. Kwamouth, May 24, 1 ♀. Niangara, November 19, 2 ♀. Thysville, June, 1 ♀.

Megachile simulator Cockerell

Faradje, 3 ♀, December; Yakuluku, 4° 20′ S., 28° 50′ E., November, 1 ♀.

The type, nearly 18 mm. long, is from Yapi, Gold Coast (Simpson), and is in the British Museum. The female resembles *M. ikuthaënsis*

Friese, which has a similar ventral scopa (very dark brown, black on last sternite), but *M. simulator* differs by the pale hair of legs and gray hair of third tergite. The male (from Yapi) comes close to *M. saganeitana* Gribodo, which also has spines at sides of sixth tergite, but in Gribodo's species tergites 1–5 are densely red-haired, six has gray. The Lang and Chapin females show that the hair of third tergite varies to dark brown, and they show much black hair on legs. Thus it might appear that the species is after all *M. ikuthaënsis;* but it has the short broad clypeus of *Eumegachile,* and Friese does not place his species in that group; Friese also says that the tergites of *M. ikuthaënsis* are shining, finely and sparsely punctured; in *M. simulator* they are dullish, the punctures numerous, running in rows. A noteworthy feature is the pale hair on inner side of hind tibiae, the hind edge of which shows as a pale line when the insect is seen from behind.

One of the specimens carries a large lump of orange resin under the mandibles, indicating that it is a resin worker.

Megachile torrida Smith

Poko, 2 ♂, 1 ♀, August; Banana, both sexes, August; Malela, 2 ♀, July; Faradje, 11 ♀, March, April, and December; Stanleyville, 1 ♀, 1 ♂, April, May; Boma, 1 ♂, June; Vankerckhovenville, 1 ♀, April. This looks like the male of *M. rufipes,* but it is easily separated by the strong keel on clypeus of female and the face of the male covered with light hair.

The male from Boma is unusually small, with narrower face than usual. The legs, typically red, vary in color. One Faradje female and two from Eala (Brédo) have black legs; the other Faradje females have red legs. A female from Chinchoxo has the hind tibiae red, but hind tarsi black, and longer than in the Faradje specimens.

Megachile trichora Vachal

Stanleyville, 3 ♀, 1 ♂, March, April; Gamangui, 1 ♀, February. Superficially resembles *M. clypearis* Friese, but it is longer and more slender. The male is remarkable for the transverse keel of sixth tergite, which is very short, black, wide, broadly truncate, the truncation somewhat concave. The thick but simple front basitarsi have a long fringe behind, which is mainly black, but pale at base. The face is covered with pale fulvescent hair, mixed with brown, and thus the male is at once distinguished from *M. chrysorrhoea* Gerstaecker, in which the upper part of the clypeus is bare, and the lower carries a dense, pure white beard.

Megachile truncaticauda Cockerell

Stanleyville, 9 ♂, April, May; Gamangui, 1 ♂, February; Akenge, 1 ♂, September; Thysville, 1 ♂, June. The mandibles have a large tooth near base beneath; the front coxal spines are strongly divergent; the sixth tergite is covered dorsally with red tomentum.

Megachile venusta malelana, new subspecies

FEMALE.—Length about 8 mm.; at first sight appearing to be *M. ancillula* Vachal, but easily distinguished by the pale (bluish appearing) tomentum covering at least basal half of sixth tergite. Eyes reddish; clypeus with a shining band from base to apex; mandibles black, a little red at tip, with whitish tomentum at base; antennae black, the flagellum very feebly rufescent beneath; hair of face and front cream-color, lighter and abundant at sides of clypeus, of vertex black, of cheeks pure white; mesothorax and scutellum entirely dull; no pale band in scutello-mesothoracic suture; hair of thorax above thin, pale fulvous, not mixed with black (thus quite different from *M. ancillula*); hair of tubercles yellowish, but of mesopleura dull almost bluish white; tegulae dark brown posteriorly but anteriorly (very broadly) and externally hyaline; wings dusky hyaline, second cubital cell receiving second recurrent nervure a short distance from end, and first not so near base; legs with dull white hair, red or reddened on inner side of tarsi, the color bright on hind tarsi; hind basitarsi short and broad, parallel-sided (as in *M. ancillula*, but distinctly broader); ends of tarsi red; abdominal bands slender and entire, pale flavescent; ventral scopa pure white at base, bright red (without black at sides) on sternites 4 and 5, entirely black on sixth.

Malela, 1 female, July 9, 1915. In an unpublished table this runs to *M. asarna* Cockerell, from Ceres, Cape Province (J. Ogilvie). The two are distinguished thus:

Hair of face cream-color; tegulae partly dark; hair of thorax above fulvescent; abdominal bands yellowish; hind basitarsus not as long as the remaining joints together; second cubital cell shorter.....*venusta malelana* Cockerell.

Hair of face pure white; tegulae entirely pale testaceous; hair of thorax above white; abdominal bands white; hind basitarsus about as long as the remaining joints together; second cubital cell longer.....*asarna* Cockerell.

It is smaller than *M. ekuivella* Cockerell, with the abdominal bands considerably narrower and not so red.

On all counts this falls nearest to *M. venusta* Smith, but it is separable (Smith's type examined) by the black hair of sixth sternite (as in *M. ancillula*), and hair at sides of face yellowish. The sides of fifth sternite lack the dark or black hair which appears in *M. meade-waldoi* Brauns, *M. marusa* Cameron, and *M. seychellensis* Cameron. There are two places called Malela; our insect came from the one 6° S., 12° 40′ E., near the mouth of the Congo.

Megachile uvirensis Cockerell

Described in a paper not published at the time of writing, from Uvira, Belgian Congo (J. Ogilvie). Lang and Chapin collected two (one lacks the head) at Malela, July. This is almost exactly like *M. polychroma* Cockerell, but when the abdomen is seen from above, white hair projects at sides, and the sixth tergite has no pale tomentum. The hind basitarsi are very broad. Length of insect about 10 mm., anterior wing, 6.5. The mandibles are quadridentate.

Subgenus **CREIGHTONELLA** Cockerell

Megachile elegans Friese

Thysville, June 2, 1 ♀. The hair of face and front is slightly fulvescent, not pure white as in a specimen from Uvira (A. Mackie). A characteristic feature is the abrupt enlargement of the white hair-bands at sides of tergites, making large triangular patches. The ventral scopa is red, black at sides.

Megachile ianthoptera sosia (Vachal)

Coquilhatville, May, 1 ♀; Stanleyville, April, 1 ♀, 1♂. The female has quadridentate mandibles, but the hind tarsi have black hair, as in typical *M. ianthoptera* Smith. Smith described the mandibles of female *M. ianthoptera* as quadridentate, but Mr. R. B. Benson has examined the type, and finds them quinquedentate, in accordance with the current identification.

Megachile polyacantha Cockerell

Boma, 5 ♂, June. Three have the spines on transverse keel of sixth tergite red, but in the others they are so dark as to be practically black, as in the type from Thysville. I find in the collection a male from Thysville, June, in which the spines are red. Thus the difference in color appears to have no racial significance.

Fig. 1. *Gronoceras bombiformis* (Gerstaecker). Sixth tergite from sketch of type by Dr. H. Bischoff.

Gronoceras bombiformis (Gerstaecker)

Dr. H. Bischoff has very kindly examined the holotype of *G. bombiformis* in the Berlin Museum, and sends a sketch of the caudal end. He also states that the middle of the clypeus is uniformly densely punctured, and the anterior basitarsi are not so broad as in *G. combusta*. From the details he gives, no doubt can remain that *G. wellmani* Cockerell is the genuine *G. bombiformis* (Gerstaecker), the latter name having of course long priority.